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Forests for people, livelihoods and poverty eradication: social development and indigenous and other local and forest-dependent communities, including forest land tenure; social and cultural aspects

Cultural and social values of forests and social development

Report of the Secretary-General

Summary

The present report reviews the social, cultural, economic, environmental and political challenges of the complex relationships between people and forests. The report highlights the growing importance of good forest governance and its links to land ownership, tenure security and social development. The role of governance in enhancing the socio-economic and environmental benefits of forests is also recognized. Forests can contribute significantly to addressing the Millennium Development Goals, in particular in relation to water, health and environmental sustainability. The report reviews the linkages between forests and climate change, water and health. The following are identified as key challenges: policy and forest research interface, decentralization of forest governance and the involvement of indigenous communities. The report also identifies three key focal areas concerning the sustainable management of forests which are likely to continue to occupy attention: (a) climate change and new opportunities for forest financing; (b) forest governance, ownership, tenure and use rights; and (c) indigenous peoples and local knowledge in changing global economies.

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I. Background

1. Despite their role in the human imagination as repositories of the ancient, the pure, the sacred or the primordial, forests have a history that is one of constant change. That history includes the changing nature and extent of forests, changing human needs and social forms and new approaches to forest governance, rights and access. The history of forests is therefore also about the changing relationships between people and forests.

2. Changes in forests and forest-human relationships have been occurring rapidly over the past two decades, in association with massive global economic, political and ecological shifts. The consequences of deforestation and forest degradation, the need for sustainable forest governance and the intricate links through which the material and economic importance of forests is tied to their cultural and symbolic significance are especially evident at this historical juncture.

3. Current contexts for debating the future of forests include landmark international deliberations related to environmental management, among them the continuing negotiations under the United Nations Framework Convention on Climate Change, actions under the other Rio Conventions affecting forests (the Convention on Biological Diversity and the United Nations Convention to Combat Desertification), the ninth session of the United Nations Forum on Forests in early 2011 (and subsequent meetings in 2013 and 2015), the International Year of Forests (2011), the United Nations Conference on Sustainable Development (Rio+20) meetings in 2012, the review of the effectiveness of the international agreements on forests in 2015, the urgency of meeting the Millennium Development Goals by 2015 and the role forests play in addressing the challenges to meeting the Millennium Development Goals.

4. Against this backdrop, the report seeks to draw four lessons:

(a) The first major lesson from the past 50 years of forest governance is that it is necessary to incorporate the voices of people into forest governance if the goals of ensuring that people benefit from forests and maintaining long term and sustainable benefits from forests are to be met. On-the-ground evidence shows a clear need for involving those who live in or in close proximity to forests in decisions about what happens to forests. Perforce, that involvement will be through varied political processes, influenced by preconceived notions about forest residents, shaped by rapidly shifting markets and technologies and subject to changing parameters of global health and human security within forests and beyond;

(b) A second major lesson provided by the history of changes in forests and forest governance is that no single agency or class of actors has the knowledge, capacity and interest necessary for enhanced forest management globally. Collaborative relationships, based on clear tenure, are critically important for better forest management, but collaborations for managing forests are complex. They need commitment, a clear delineation of tenure and roles and ongoing exchange among partners in order to be successful. Only with such collaboration among different forest managers and users and at different levels of decision-making related to forests will it be possible to improve the various benefits forests provide to humans and the planet;

(c) The third major lesson is related to the diversity of benefits from forests. Quite apart from the directly consumable goods upon which hundreds of millions of families depend — timber, firewood, fodder, food, medicine and non-timber forest products — forests also provide other incalculable indirect benefits and services, including carbon storage, biodiversity conservation, disease containment and regulation of hydrological, carbon and various nutrient cycles. Some of these benefits are public, others private; some are local, others global; and some are immediate, and others long term. Appropriate management is critical in order for forests to continue to produce these diverse goods and services that are necessary for life and sustainability;

(d) A fourth and more emergent lesson is that the key benefits from forests are not necessarily synergistic. That is to say, the same actions in relation to forests will enhance some desired benefits but undermine others. Governing some forests so as not to harvest any products from them will enhance carbon sequestration in forests that are not mature, protect biodiversity and reduce the likelihood of the emergence of new disease, but it will also prevent individuals, social groups and nation-States from gaining much in the way of economic or livelihood benefits out of the same forests. Managing forests is therefore an effort to balance different actions and policy goals. The process of choosing how to achieve this balance can be informed by better science and knowledge, but it is also a matter of national interests and how decision makers view the importance of some outcomes over others. Science cannot decide whether those managing forests should place a greater value on biodiversity, livelihoods or carbon sequestration.

5. Information systems and the knowledge base necessary to make informed decisions and balance among competing goals has improved tremendously over the past two decades, particularly with the availability of spatial and remotely sensed data. Nevertheless, there are many parts of the world where there is a genuine lack of needed information and knowledge about forest outcomes and how forest governance is affecting outcomes. More information is needed urgently in order to address questions about trade-offs among different forest outcomes, such as their contributions to livelihoods, biodiversity, carbon sequestration and water conservation; how different types and levels of decision-making affect desired outcomes from forests; and the effects of socio-economic vs. biophysical factors on forest outcomes. Governments and international agencies need to invest more resources in creating a better forest information and knowledge infrastructure than is currently available.

6. The present report was prepared as a background paper to facilitate discussion during the ninth session of the United Nations Forum on Forests. The themes for discussion at that session under agenda item 5 are as follows: (a) community-based forest management; (b) social development and indigenous and other local and forest-dependent communities, including forest land tenure; and (c) social and cultural aspects.[1] The present report provides a combined review of sub-items (b) and (c), owing to the close relationships between those two themes.

[1] See the multi-year programme of work for 2007-2015 (E/2007/42-E/CN.18/2007/8 and Corr.1, chap. I, sect. C).

II. Contribution of forests to livelihoods, poverty eradication and the Millennium Development Goals

7. Hundreds of millions of families depend on timber, firewood, fodder, food and non-timber forest products; forests also provide other incalculable indirect benefits and services. Nevertheless, the key benefits from forests are not necessarily synergistic. Managing forests is therefore an effort to balance different actions and policy goals.

8. The importance of forests and the contributions of forested ecosystems to human well-being cannot be overstated.[2] The challenge, however, has been to estimate the value of benefits and services produced by different ecosystems, among them forests. One such well-known attempt has been through the ecosystem services approach, which is useful in assessing and reviewing the multiple benefits that forests provide.

9. Ecosystem services are the outcomes of the diverse processes and functions of an ecosystem. They are also seen as the benefits of nature to households, communities and economies.[3] Ecosystem services include both the products and the benefits that all forested ecosystems generate. They include, for example, water quality and quantity, timber, firewood, shelter, aesthetically pleasing views, recreational facilities, pollinators, nutrients, medicinal plants and wildlife.

10. In its 2003 report, the Millennium Ecosystem Assessment, a collaborative project involving more than 3,000 scientists from around the world, crafted a useful framework for thinking about the different ecosystem services forests provide and their interactions.[4] According to this framework, ecosystem services can be divided into four general classes: provisioning services, regulating services, supporting services and cultural services.

11. Many of the services and types of services provided by forests are not valued financially. Owners and managers of forests who act to protect and conserve forests do not receive any financial compensation for these goods and services, which nevertheless benefit many other humans. One of the key economic questions concerning forest governance is therefore how the right incentives can be created in order to ensure that those forest ecosystem services that are fundamental to human survival can continue to be produced sustainably.

12. Current knowledge permits only a rough discussion of all the different goods and ecosystem services that forests produce. Information on the value of goods provided by forests, such as timber, firewood, fodder and non-wood forest products, is subject to incomplete reporting, inconsistent measures in different countries and missing data on illegal activities. The services forests perform are complex, site-specific and often non-monetized, and the nature of the relationships among these services is for the most part unclear.

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[2] Douglas Krieger, "Economic value of forest ecosystem services: a review" (Washington, D.C., The Wilderness Society, 2001).

[3] James Boyd and Spencer Banzhaf, "What are ecosystem services? The need for standardized environmental accounting units", *Ecological Economics*, vol. 63, Nos. 2-3 (1 August 2007).

[4] Joseph Alcamo and others, *Millennium Ecosystem Assessment: Ecosystems and Human Well-Being: A Framework for Assessment* (Washington, D.C., Island Press, 2003).

13. Many different kinds of forest products, particularly non-wood forest products, are highly valuable and important for local livelihoods and national incomes, yet these values are not captured in national accounting. Globally, timber is one of the most important products from forests, especially in the light of the rapid rates of economic growth in many developing countries. The timber trade also helps to meet ongoing needs in many consumer countries. The world's annual wood removal is more than 3.4 billion m^3, a little less than 0.7 per cent of the growing stock. The value of annual wood removals exceeds $100 billion annually, which is nearly equal to the flows of international development aid and more than 50 times the flows for biodiversity conservation aid.

14. The planet's most critical terrestrial biodiversity and wildlife reside in forests classified as protected areas. Although it is undoubtedly the case that a substantial proportion of biodiversity also exists in mixed-landscape mosaics outside protected areas, even in these cases forests serve a tremendously valuable function in harbouring biodiversity. Efforts to protect biodiversity through protected areas have led to a substantial increase in areas under protection, such that nearly 12 per cent of the planet's terrestrial surface is currently under some form of protection. The area of forests designated for protective functions of forests increased by 59 million hectares between 1990 and 2010.[5] The challenge to managing these protected areas is in ensuring that local and indigenous communities are engaged and that they have access in order to meet their basic needs.

15. Bushmeat, or the meat from wild game, is a highly valued food in tropical forests worldwide, and its increasing scarcity results in "seasonal hunger" among those without alternative protein sources.[6] Policy and research challenges have long centred around the question of whether there is a viable substitute for bushmeat in the dietary regime of forest dwellers. Many strategies for cultivating alternative sources of protein have been suggested, including the domestication of wild game.[7] To date, no amount of research or on-the-ground experience has yielded a clear and practicable solution, especially in the light of increasing illegal logging and weak State capacity to conduct monitoring and control efforts. This is posing a challenge to managing protected areas and protecting endangered species.

16. Three factors will conspire to create greater pressures for the deforestation of natural forests in the next two to three decades: firstly, global concerns about climate change and the need to reduce emissions; secondly, the urgent need to find alternatives to fossil fuels — because of price volatility in international energy markets and because of increases in demand for energy; and thirdly, growing demands for food and fibre with increases in population, urbanization and per-capita incomes.[8] These pressures mean that international efforts concerning forests will

[5] Food and Agriculture Organization of the United Nations, *Global Forest Resources Assessment 2010* (Rome, 2010).

[6] Igor Garine, "Adaptation biologique et bien-être psycho-culturel", *Bulletins et mémoires de la Société d'Anthropologie de Paris*, vol. 2, No. 2.

[7] François Feer, "Les potentialités de l'exploitation durable et de l'élevage du gibier en zone forestière tropicale" in *L'Alimentation en forêt tropicale: interactions bioculturelles et perspectives de développement* (Paris, United Nations Educational, Scientific and Cultural Organization, 1996).

[8] Sten Nilsson, "The three Fs: food, fiber and fuel — global development: science and policy for the future", presentation at the Conference of the International Institute for Applied Systems Analysis (Vienna, 2007).

need to simultaneously identify substitutes for biofuel-based energy and timber and improve the productivity of agricultural land in order to reduce pressures for the conversion of natural forests, and create stronger pro-poor forest governance mechanisms to protect the interests of poorer and marginal populations.

III. Forests and climate change

17. Forests store more than 289 gigatons (GT) of carbon in their above-ground biomass. Climate science has highlighted the dangerously high levels of greenhouse gases in the atmosphere and the role of human activities in contributing to their increase. The role of forests in capping emissions has also become broadly recognized. As the *Eliasch Review* noted in 2008, "Urgent action to tackle the loss of global forests needs to be a central part of any future international deal on climate change".[9] Such an international agreement needs to not only reduce emissions, but also benefit developing countries through the transfer of financing, supporting poverty reduction and helping preserve biodiversity and other forest services.

18. The *Eliasch Review* identified action in four areas as being key to the successful reduction of emissions from forests: (a) creation of effective targets on the basis of information on baseline levels of emissions from different regions and forests; (b) robust monitoring, reporting and verification of changes in emissions; (c) mechanisms to link forest carbon abatement to global carbon markets, as well as the involvement of the private sector in the forest carbon market; and (d) strong governance and effective mechanisms for the distribution of forest carbon finance, since this will have an impact on local communities and indigenous people.

19. Public awareness of the significance of forests as carbon sinks has grown. The potential of forests for climate change adaptation and mitigation measures has been recognized, and has gained prominence in the discussions of the United Nations Framework Convention on Climate Change. The mechanism for reducing emissions from deforestation and degradation (REDD) has been the most-debated measure and holds the opportunity for forest financing and sustainable forest management. The challenge will be developing the approaches, policies and practices needed to effectively integrate the objectives of climate change mitigation and adaptation with sustainable forest management and ensuring that they contribute to the welfare of local communities and indigenous people.

IV. Forests and social development

20. Since the publication in 1987 of the report of the World Commission on Environment and Development, entitled "Our Common Future" (also called the Brundtland Report in honour of Gro Harlem Brundtland, the Chair of the Commission; see A/42/427, annex); the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil in 1992; and the 2002 World Summit on Sustainable Development in Johannesburg, South Africa, the global community has come together to highlight the need for environmental protection and responsible

[9] Johan Eliasch, *Climate Change: Financing Global Forests — The Eliasch Review* (London and Sterling, Virginia, Earthscan, 2008), commissioned by the Government of the United Kingdom of Great Britain and Northern Ireland.

development. This offers the forestry sector unique opportunities and challenges, in particular in addressing poverty eradication, sustainable development and the maintenance of environmental services. A key challenge will be to highlight the contributions of forests to poverty reduction and the central role they can play in achieving the Millennium Development Goals. Linking forests to the Goals should be built into the awareness-creation programme of the International Year of Forests in 2011.

21. Linkages between forestry and development need to be made using an integrated, multisectoral approach, including in the areas of agriculture, water, energy and other natural resources, in order to promote rural development and improve rural livelihoods. In this regard, there is a need to promote examples at the national and state levels of poverty reduction through forest management policies that have the potential to be scaled up in areas with similar socio-economic conditions.

22. Small and medium forest enterprises and community-based forest management should be supported through capacity-building in management, finance and technology in order to create employment opportunities for youth. Developing the knowledge base of youth in managing forest enterprises should form a basis for promoting and championing rural development using forests, forest industries and allied industries. Forest industries, for instance, provide opportunities for employment and income that exceed those of subsistence farming or small-scale agriculture.

23. There are emerging business models for community and company engagement in respect of managing concessions and corporate social responsibility towards such communities. There is an increasing trend for companies to include communities in forest management, the identification of cultural and sacred sites and in forest governance generally. These emerging business models are increasingly providing opportunities for employment and enhancing the incomes of local communities and families in forest areas. These models are also resulting in increased incomes from the sharing of profits, owing to community-company partnerships, while strengthening social relationships.

24. The increasing trend towards wage labour in the harvesting of forest products, including non-timber forest products, has significant gender dimensions, given the previous trends among many forest peoples towards gender-specialized but balanced cultural ecologies whereby women and men moved through forests together, pooling different kinds of resources for the nourishment of their families and their immediate clan or community. There is a tendency, however, for the conversion of labour to remunerated work to be skewed in favour of males. Effort must be made to ensure the full participation of women, given that they are primary users of forests and that their needs and knowledge of forests must be recognized.

25. Women in the developing world generally have the responsibility of meeting household food and energy needs; the depletion of forest resources therefore increases the burden on women. The situation is worse in sub-Saharan Africa, where the responsibility for taking care of household members affected by HIV/AIDS falls mainly on women, leaving less time for agricultural activities. This makes women more reliant on the forest for food and fuelwood. Furthermore, in conflict situations women are more reliant than men on forest products and services.

V. Forests and cultures

A. Cultural and spiritual values of forests

26. Although trees and forests have immense cultural and spiritual values for humans, their values are poorly recognized, in part because of the lack of a common method for the valuation of forest goods and services. The dominant economic, materialistic, scientific and essentially utilitarian view of forests that has emerged over the last 300 years overlays much older values that have shaped a very strong cultural relationship between forests and humans. These intangible cultural and spiritual values persist in many contexts today, and are undervalued or ignored, their contribution to human well-being unacknowledged.

27. Cultural forests are among the oldest protected areas. For a long time, traditional and religious communities have set aside specific forests, areas of forests, or sometimes even individual trees, for cultural, sacred and religious purposes. Such areas are often well-managed and maintained because of cultural, spiritual and religious values. Integrating cultural and spiritual values into national forestry programmes has the potential to safeguard protected areas and ensure their long-term sustainability. These protected areas have the capability of supporting high levels of biodiversity alongside their sacred values, and are often better protected than Government-designated protected areas. A conscious effort should be made to encourage traditional owners of some sacred forests to seek better protection of their sites, including through the incorporation of those sites within Government-designated protected areas such as forest reserves and national parks.

B. Opportunities for resilience and restitution

28. In the global context, where human-caused climate change has forced a complete re-evaluation of the relationship of the human species with the biosphere, the remaining forests that have been set aside as cultural, sacred or religious forests present unique opportunities to help in halting the destruction of forests and to promote protection, regeneration and even restitution. There is growing evidence that religious communities of all types are already starting to do this and that, with the appropriate support, in particular through capacity-building and forest financing, much more can be done to protect forests worldwide.

29. Beyond biodiversity and cultural continuity, the contribution of forests to human well-being is increasingly being recognized, for example by health professionals. Within this recognition, there is also a spiritual dimension, which itself has a direct link to physical and mental health.

30. There are opportunities for increased research into cultural, sacred and religious forests, which could serve as a counterweight to the economic and scientific valuations of forests that are currently predominant in informing forest business management and policy.

C. Application of traditional forest-related knowledge to sustainable forest management

31. Traditional knowledge and systems of land use have proved far more environmentally appropriate, resilient and complex than initially supposed by outsiders. Traditional knowledge is increasingly gaining recognition for its contributions in shaping policies towards achieving the Millennium Development Goals, in particular for eradicating poverty and promoting economic, social and environmental sustainability. Traditional knowledge has made significant contributions to sustaining livelihoods and enhancing human well-being, and has been used over time in the management of natural resources such as forests and water.

32. There is a growing recognition of the role that traditional forest-related knowledge plays in forest management and the conservation of forest biodiversity, as well as in the identification of valuable genetic resources. This knowledge is dynamic, reflecting the ability of local communities and indigenous people to adapt to the changing environmental, social, economic and political conditions so as to ensure that forests continue to provide goods and services such as food, medicine, wood and other non-timber forest products, water and spiritual, social and cultural values. Despite this recognition, the impact of the loss of forest-related knowledge on livelihoods and on cultural and biological diversity, as well as the capacity of forested landscapes to provide environmental goods and services, remain poorly understood and undervalued. Forest management will therefore benefit from the exchange of knowledge and practice between traditional ecological knowledge systems and those of forest science.

33. The major challenges in the promotion of traditional forest-related knowledge in sustainable forest management are as follows:

(a) The issues of equitable sharing of benefits and protection of intellectual property rights. The future work of the United Nations Forum on Forests in this area should be informed by the ongoing negotiations under the Convention on Biological Diversity on an access- and benefit-sharing protocol, and by the work of the Task Force on Traditional Forest Knowledge of the International Union of Forest Research Organizations;

(b) The appropriate role of forest science in developing and documenting the traditional forest-related knowledge base in order to allow for a stronger exchange of knowledge between the two systems — traditional forest-related knowledge and forest science — with a view to enhancing livelihoods and human well-being.

34. Due consideration should be given to strengthening research on traditional forest management and its contribution to conservation and sustainable forest management. Efforts should be made to understand the scientific underpinnings of traditional forest management systems. It is also critical to undertake economic, marketing and policy research to improve rural income opportunities from products and services provided through the application of traditional forest-related knowledge. This should be supported by a strong collaboration between holders of traditional forest-related knowledge and educational institutions to develop skills and interest in traditional forest-related knowledge.

D. Traditional forest-related knowledge and climate change

35. Addressing gaps in climate science can be informed by links to traditional forest knowledge, owing to the close relationships between indigenous people and forests. Local observations of changes in the environment have enabled local communities and indigenous people to adapt to climate change, in particular changes in weather patterns. For example, many farming communities in Africa, Asia and Latin America can effectively predict rainfall patterns, representing the potential for the storage of a large volume of information that requires documentation.

E. Traditional forest-related knowledge and health delivery

36. The World Health Organization (WHO) estimates that between 60 and 80 per cent of people in the developing world use traditional medicine to meet their daily health requirements. Traditional medicine has a strong foundation in herbs sourced from forests. In fact, some modern medicines are plant-based and use these medications for the same purposes that indigenous people do. One challenge, however, to the development of traditional medicine is the absence of legislation to regulate trade practices at the national, regional and international levels. This lack of regulation has also constrained the development of knowledge databases on the use of plants and their ability to treat various diseases. This lack of regulation and documentation can sometimes result in the loss of property rights and benefit flows to local communities and indigenous people. A critical issue will be the need for documentation of traditional knowledge.

VI. Changing forest landscapes and their governance

A. Trends and impacts of changing forest landscapes

37. At some 4 billion hectares, forests cover nearly 31 per cent of the global land area, according to official statistics.[5] Deforestation rates have slowed from 16 million hectares per year in the 1990s to approximately 13 million hectares during the period 2001-2010. With the planting of new forest areas, the net loss of forests is closer to 5 million hectares per year in the past decade, as compared with 8 million hectares per year during the period 1991-2000. Nevertheless, new forests mostly lack the diversity that is present in natural forests.

38. The total area of forests continues to decline, and South America and Africa continue to have a high net loss of forests. The only major region of the world with a net gain in forest area during the period 2001-2010 was Asia, owing primarily to large-scale plantations in China that offset substantial deforestation in many countries in South and South-East Asia.

39. Most of the world's forests are owned by Governments, but private and other forms of ownership are increasing, and Governments often set aside areas for use by communities. Only about a third of forests are natural forests. More than half are regenerated forests, and about 7 per cent are plantations.

40. A substantial proportion of the world's forests, close to 12 per cent, is classified for the protection of biodiversity, and another 7 per cent is designated for soil and water conservation. Approximately 30 per cent of forests are used primarily for the production of wood and non-wood products, an additional 24 per cent are classified for multiple uses, and 4 per cent are classified as having primarily recreational or other social and cultural functions. The areas classified primarily for productive functions have declined in the past two decades by nearly 50 million hectares, while areas classified for multiple uses increased by 10 million hectares.

41. Forest landscape restoration brings people together to build sustainable relationships among communities, commercial interests and the damaged ecosystems on which they depend. Forest landscape restoration has had a great impact in generating alternative livelihoods, and in creating employment and long-term socio-economic infrastructures for providing support to vulnerable communities. Such restoration relies on demonstrating the viability of other forms of income generation that do not continuously sap a forest's resources. It has been successfully implemented in the Great Lakes Region (Burundi, Rwanda and the Democratic Republic of Congo).

42. Successful restoration projects require the collaboration of all stakeholders that share the forest landscape, from local farmers and landowners to logging companies and family-run charcoal producers. Forest landscape restoration should have the support of the communities that depend on forests for their livelihoods. For instance, the local population of the mangrove forests of the Caribbean region of Colombia is leading the transformation of endangered mangroves through a project being implemented by the International Tropical Timber Organization and the International Union for Conservation of Nature.

B. Role of governance in enhancing socio-economic and environmental benefits from forests

43. Forests provide direct and indirect livelihoods and other economic benefits to more than 1.6 billion people.[10] Forests have long been seen as the reservoir and source of much of the species biodiversity on the planet. The carbon stored in forests is above 650 GT, more than that found in the atmosphere, suggesting that the removal of forests will more than double current levels of atmospheric greenhouse gases, to well above the levels deemed tolerable by climate scientists.

44. These statistics about forests are important in order to convey their immense significance for the survival of humanity as a species, but it is the real lives of people living with and in forests, and the ways in which they depend on forest resources, that are more immediately relevant in considerations of how to govern forests so as to ensure the security of the livelihoods of the poor and marginal peoples that depend on forests.

45. Successful governance requires that rules evolve. The fascinating institutional interplay related to socio-ecological complexity and contextual change has helped generate a vast body of research on forests. The size, variety and depth of this body

[10] Food and Agriculture Organization of the United Nations, "Tenure security for better forestry: understanding forest tenure in South and South-East Asia" (Rome, 2007).

of research is a reasonable reflection of the many different ways in which forests have been, and continue to be, central to human survival, livelihoods and prosperity.

46. In recent times, forest governance has for the most part moved away from the centrally administered, top-down regulatory policies that characterized forest governance for much of the nineteenth and twentieth centuries. Unlike during much of the colonial period, when Governments in Africa, Asia, and Latin America sought to bring forests under their control for the resources, strategic value and economic benefits they represented, the process has been quite the reverse, with regional variations.

47. Through decentralization reforms in the last two decades that have often also promoted local, more democratic, participation in governance, local communities and organizations have come to govern close to an additional 200 million hectares of forests.

48. Many Government-owned forests are managed as common property for multiple uses by local communities and community-based organizations. Many other forests classified as being under public ownership are effectively governed as private timber concessions by logging companies.[11] Civil society organizations and market incentives increasingly play a role in forest governance through certification processes, Government procurement policies and changing consumer preferences. This trend in governance is seen as a response by civil society to public concern about deforestation and forest governance.

49. Although payments for environmental services of forests have not become a major force in terms of the size of the area under such schemes, there is reason to believe, especially if REDD projects and policies become entrenched, that payment for environmental services initiatives will constitute a substantial shift in the governance of forests in the future.

C. Major tenure systems and tenure security

50. Forests can be viewed as falling under three major forms of tenure: (a) public, or Government, ownership; (b) private or market ownership; and (c) communal or civil society ownership. Government agencies own most of the world's forests: nearly 80 per cent. Private and communal/indigenous tenure cover 11.9 and 8.3 per cent, respectively, but in the developing world the position of communal and indigenous actors is far stronger. Private actors possess only about 5.6 per cent, in contrast to the 14.1 per cent of forests characterized by communal tenure, but, since half a billion people or more may be dependent on forests for their livelihoods, the total area communities own and control seems quite low. Ongoing trends would seem to favour greater access to and control over forests by local communities.

51. Variations in tenure arrangements are important to take into account because they create different incentives for the holders of tenure, and therefore lead them to act in different ways when using, managing or conserving the resources they own. In practice, tenure rights over forests are often far more finely divided and

[11] Alain Karsenty, "Overview of industrial forest concessions and concession-based industry in Central and West Africa and considerations of alternatives" (Paris, Centre de coopération internationale en recherche agronomique pour le développement, 2007).

distributed among different social groups. Discussions of property rights and natural resources distinguish among four basic elements relevant to the use and governance of forests: (a) access and withdrawal rights; (b) management rights; (c) exclusion rights; and (d) alienation (transfer) rights. When a household, community or group has access and use rights to forests, it can gather benefits from that forest. When it also holds management rights, it can be viewed as a claimant to a resource. Those who have access and use rights, management rights and the right to exclude other users from forests are seen as proprietors of the forest. Owners have all the rights that constitute the full bundle of property rights with respect to forests.

52. Whether forest tenure and rights to use, manage, exclude others and transfer forests rest with communities, private owners or public agencies, they have major implications for forest management outcomes. Some kinds of tenure are more likely to lead to greater economic efficiency and output from forests.

53. Just as private ownership of forests is often associated with high economic benefits (and deforestation), other tenure arrangements, such as Government ownership, are seen as necessary for safeguarding plant and wildlife biodiversity in forest areas. Other arrangements may also be more strongly associated with carbon sequestration. Indeed, different ecosystem services from forests exist in distinctive relationships with different allocations of tenure rights over forests.

54. Although in practice different forms of tenure and ownership might exist only in mixed or hybrid relationships, it is still useful to outline the key outcome tendencies associated with the different forms of tenure. Public or Government tenure corresponds with an emphasis on the exclusion of multiple types of use rights in forests, a focus on conservation and protection, and the capacity to restrict use. Indeed, most of the world's most restrictively protected forests are under governmental forms of tenure. Governments own most of the protected areas in the world; they also own and manage closed-access forests for soil and water conservation purposes, and they are one of the few groups of actors that can continue to spend more on forest protection than they receive as income from forests.

55. In contrast, private ownership is associated with greater efficiencies in the management of forests, the capacity to generate greater economic output and profits and the capacity to enhance economic development-oriented objectives. Most of the world's forests that are managed for profit are, in consequence, owned by private corporations. Even in those instances in which Governments own such forests, the rights to manage them, as in the case of concessions, is often auctioned off to private companies. Plantations are managed by both Governments and private actors, but plantations oriented towards high profits — whether through the sale of timber, cash crops or carbon — tend to be owned and managed by private companies. Indeed, major new areas such as carbon sequestration are more likely to become a viable market in the future, owing to efforts by private companies to own more lands, particularly in tropical countries, in a bid to benefit from sequestering large amounts of carbon at relatively low costs and to secure profits accruing from higher carbon prices. A key challenge will be to ensure that benefits from such transactions benefit local and indigenous communities.

56. Customary or community tenure, on the other hand, typically corresponds with the management of forests for multiple uses and objectives — among them, local livelihoods, the promotion of use-oriented diversity in forests and, often, when

tenure rights are secure, enhancing forest biomass.[12] The long-run livelihood interests of communities, local populations and indigenous groups in forests are seen as translating into a willingness to manage forests for longer-term benefits, and a willingness to protect forests in the short run so as to secure future gains.

57. Another way to enhance forest outcomes is to seek complementary interests and capacities among private, communal and public forms of tenure. Because tenure over forests comprises a number of different rights that can often be separated in practice, it is easy to imagine hybrid forms of forest tenure in which communal actors may have the right to access, use and manage a forest, while the right to exclude other users and transfer the resource might be vested in Government agencies. An analogous combination can be imagined in the case of Governments and private actors or companies, or in the case of mixed forms of tenure in which different communal organizations have different rights. Alternatively, a situation in which a number of different types of actors might have specific rights can also be envisioned. Indeed, there are many efforts to build such amalgams of rights ownership that attempt to marry the interests of private, communal and public decision makers, which could result in different forms of hybrid tenure and governance arrangements in relation to forests.

58. While the allocation of tenure and incentives to different groups of decision makers, government agencies, corporations and communities has clear implications for whether forests are more likely to be conserved for biodiversity, used for livelihoods or economic benefits or protected for carbon sequestration, security of tenure is necessary in all of these examples in order for tenure to be effective in producing desired social outcomes.

59. An analysis of tenure security over mangrove forests in Indonesia and Viet Nam shows that such forests are often managed well by local communities that use them for livelihoods but do so without endangering the sustainability of the resource system. When central Governments attempted to manage the same forests, however, local users lost any sense of secure rights over benefits from forests.[13] Consequently, the utilization of these forests became far less sustainable, with State appropriation and enforcement of claims over the wetlands.

60. Insecure tenure undermines the incentives for owners to improve their assets, protect them against illegal use or act in their own long-term interests. It is no wonder that many of the world's Governments, civil society organizations and indigenous peoples, including the Accra Caucus on Forest and Climate Change and the Governments of Norway and Belize, are calling for greater clarity of tenure over forests.[14]

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[12] Ashwini Chhatre and Arun Agrawal, "Trade-offs and synergies between carbon storage and livelihood benefits from forest commons", *Proceedings of the National Academy of Sciences of the United States of America*, vol. 106, No. 42 (20 October 2009).

[13] W. Neil Adger and Cecilia Luttrell, "Property rights and the utilization of wetlands", *Ecological Economics*, vol. 35, No. 1, pp. 75-89 (October 2000).

[14] See Accra Caucus on Forest and Climate Change, "Principles and processes as preconditions for reducing emissions from deforestation and forest degradation", which summarizes the main concerns of participants in a meeting of civil society and indigenous peoples, held in Accra from 18 to 20 August 2008, to discuss reducing emissions from deforestation and degradation. These concerns were restated during the Fourteenth Conference of the Parties to the United Nations Framework Convention on Climate Change, held in Poznan, Poland, in December 2008.

D. Changing forms of governance and their significance

61. Changes in forest governance can be brought about by local actors, corporate actors and international donors by advancing policy positions and mobilizing to make demands on Governments and other high-level decision makers. There are many examples from around the world of mobilization by local actors to gain a greater voice in how forests are governed. There are also now more opportunities for local populations and communities to influence what happens to the forests on which they depend; however, this will require the support of Governments. There should also be a close and coordinated working relationship between the United Nations Forum on Forests and the United Nations Permanent Forum on Indigenous Issues in addressing the issues of indigenous people that relate to forests, while continuing to "Deliver as One".

62. Three important forest governance trends stand out: (a) decentralization of management, especially for forests of low commercial value that nonetheless play an important role in the livelihoods of hundreds of millions of rural households in developing countries; (b) the substantial role of logging companies in the management of forest concessions, typically for selective logging in tropical forests; and (c) the growing importance of market-oriented certification efforts. Although such efforts originally targeted tropical timber, they have gained prominence mainly in temperate forests in the developed world. An emerging trend that could create a substantial shift in the governance of forests in the future is that of payments for environmental services. This could be a major force if REDD-plus projects and policies are entrenched. The challenge will be how to ensure that benefits from payments for environmental services are reinvested in forests and that there is a transparent mechanism to ensure the flow of benefits to local communities and indigenous peoples. The success of any such mechanism under REDD-plus will depend to a large extent on the involvement of local communities and indigenous peoples.

63. The private concession model in forest governance has long been in existence.[15] Under concessionary forest governance, central Governments or forest departments provide long-term resource extraction rights in commercially valuable forests to logging interests in exchange for a stream of revenues. Concessions continue to be a dominant form of forest governance in many tropical forests in South-East Asia, parts of the Amazon and especially in Central and West Africa, where at least 75 million hectares of forests are under concession to logging companies.[11] Governance through forest concessions is prompted by demand for logs and timber, often in distant markets, and by the need of Governments for revenues. The limited enforcement of concession agreements in most countries in South-East Asia and Africa has also meant that legal logging in concessions exists side by side with costly and unsustainable levels of illegal logging. The World Bank estimates that illegal logging results in a loss to developing countries of $15 billion every year.

64. Voluntary forest certification has arisen to fill the gap in forest governance. Certification efforts may have been launched as a way to improve the sustainability

[15] Rebecca Hardin, "Concessionary politics in the western Congo basin: history and culture in forest use", Environmental Governance in Africa Working Paper, No. 6 (Washington, D.C., World Resources Institute Institutions and Governance Program, November 2002).

of tropical forest management; however, they have gained more usage in the temperate and boreal forests in developed countries. Increasingly, through the introduction of procurement policies, legislation and initiatives such as the European Union Action Plan for Forest Law Enforcement, Governance and Trade and the Lacey Act amendments, Governments are making global efforts to address illegal logging.

VII. Emerging issues

A. Climate change: opportunities for forest financing

65. There is a growing recognition of the role of forests in developing countries in addressing climate change through the provision of incentives for REDD, which provides opportunities for enhancing poverty reduction by implementing climate change adaptation. Payment for environmental services schemes involving global public goods and services from forests, such as climate change mitigation and biodiversity, provide opportunities for forest financing.

66. REDD-plus provides opportunities for developing a mechanism through which developed country donors, corporations, non-governmental organizations and individuals will compensate developing countries for reductions in forest emissions, including through market mechanisms. REDD-plus will be a key emissions mitigation strategy, as evidenced by extensive donor investments to prepare developing countries to implement REDD-plus (e.g., $4.5 billion from six developed countries by 2012). It is expected that, by 2020, REDD-plus investments may reach $30 billion a year. This will have the potential for increased finance for forests.

67. Under REDD-plus, recipient Governments will devise strategies for national land-use and forest sector planning, stakeholder negotiations, tenure clarification, carbon brokering, national-level carbon accounting and the provision of funds and services to local actors. A key challenge will be the involvement of local communities and indigenous people in REDD-plus discussions and implementation. With the potential for financing forests, there is the possibility of a shift away from decentralization, as State forestry institutions may have the desire to manage such resources.

68. Future REDD-plus mechanisms must ensure that the rights of local communities and indigenous people are formally integrated into climate change programmes. The recognition of the rights of indigenous people and their traditional knowledge, their involvement in political decision-making processes and the equitable sharing of benefits are three principles that should guide future REDD-plus mechanisms.

69. REDD-plus mechanisms for implementation will be successful if safeguards and co-benefits, such as the conservation of biodiversity and ecosystem services and poverty eradication among local communities and indigenous people, are realized.

70. Existing and emerging initiatives concerning climate change, such as the Forest Carbon Partnership Facility, the Forest Investment Programme, the Amazon Fund and the Congo Basin Forest Fund, should provide opportunities for reviewing

lessons learned and developing a mechanism to enhance the flow of funds for addressing gaps in financing for sustainable forest management.

B. Ownership, tenure and use rights

71. It is clear that tenure and allocation of rights are among the most important factors influencing the stewardship of forests, their management and outcomes associated with forest governance.

72. Forest land tenure is reported by regional organizations to be an effective way of mobilizing farmers for protection and good forest management while improving their livelihoods. Land tenure reforms in countries such as China, Nepal and Viet Nam have enhanced livelihoods and community engagement in sustainable forest management. China's recent land tenure reform is arguably the largest in world history, affecting more than 400 million landowners and 100 million hectares of forests. The reform has resulted in increased incomes for farmers increased tree planting.[16] China's experience offers experience and lessons for other Member States considering the recognition of collective land rights.

73. A challenge to land tenure reforms is the issue of a legal framework that guarantees the rights of indigenous people and facilitates the participation of local and indigenous communities in addressing land tenure and ownership, as well as the historical exclusion of local communities and indigenous people. Additional information on land tenure is contained in the report of the Secretary-General on community-based forest management (E/CN.18/2011/4).

C. Forests and water

74. Forests have a close relationship with our water resources. Sustainable forest management is of vital importance for the supply of good-quality fresh water, protection from natural hazards like floods and soil erosion and combating desertification. For example, 10 per cent of European forests are designated primarily for the protection of soil and water; however, climate change is altering the role of forests in regulating water flows and influencing the availability of water resources. The relationship between forests and water is therefore a critical issue that must be accorded high priority if its contribution to the Millennium Development Goals is to be realized.

75. One of the greatest values of forests is sustainable water supply. Historically, however, forest managers have not focused on water, and water managers have not focused on forests. There is an increasing need for these two groups to work together and examine the interrelationships between forests and water in order to allow for the sharing of knowledge between the forestry and water sectors. Forests of the future may need to be managed equally for the sustainable supply of clean water as one of the goals for sustainable forest management, taking into account the growing demand for clean water for rural and urban populations and for agricultural purposes.

[16] Jintao Xu, Andy White and Uma Lele, "China's forest land tenure reforms: impacts and implications for choice, conservation and climate change" (Washington, D.C., Rights and Resources Initiative, 2010).

76. Access to clean water has remained one of the five key thematic areas (water, energy, health, agriculture and biodiversity) that were proposed at the World Summit on Sustainable Development, highlighting the fact that managing natural resources like forests in a sustainable and integrated manner is essential for sustainable development. In this regard, to reverse the current trend in forest degradation, strategies need to be implemented that include targets adopted at the national and, where appropriate, regional levels to protect ecosystems and achieve the integrated management of land, water and living resources associated with forest areas. This will also involve the strengthening of capacities at the regional, national and local levels.

77. In many regions of the world, the availability and the quality of water are more and more threatened by overuse, misuse and pollution, and it is increasingly recognized that both are strongly influenced by forests. It is in maintaining high water quality that forests make their most significant contribution to the hydrological characteristics of watershed ecosystems. This is achieved through the minimization of soil erosion on site, the reduction of sediment in water bodies (wetlands, ponds, lakes, streams and rivers) and the trapping or filtering of other water pollutants in the forest litter. For instance, the Lange Erlen forested area in Switzerland is flooded a dozen days each month with water from the Rhine river in order to allow forest soil to filter the water to improve its quality and recharge the groundwater of the nearby city of Basel. The forests-water linkage is an opportunity for improving livelihoods and human well-being.

78. Forested catchments supply a high proportion of water for domestic, agricultural, industrial and ecological needs in both upstream and downstream areas. A key challenge faced by land, forest and water managers is to maximize the wide range of multisectoral forest benefits without detriment to water resources and ecosystem functions. To address this challenge, there is an urgent need for a better understanding of the interactions between forests and water, particularly through research, science and traditional knowledge, so as to create awareness and build capacity in forest hydrology, thereby translating this knowledge and these research findings into policies that will improve livelihoods.

79. National forest programmes should be used as a platform to integrate water resource management plans into forestry programmes as part of a more comprehensive watershed planning process. Similarly, greater consideration in the management of transboundary watersheds and river basins should be given to the relationship between upstream forest cover and downstream water flows. An example is the Programme on the Sustainable Development of the Rhine, a transboundary initiative that adopts afforestation and forest conservation measures in order to facilitate water retention and prevent floods in nearby downstream areas.

80. There is a need for more applied research on forests and water, as well as for strengthened partnerships among research, educational, financial and political institutions. Sound comparative valuations are needed of forest services (hydrological and non-hydrological), including of their contribution to the livelihoods of forest people, the production of biofuels, the maintenance of biodiversity and aesthetic and recreational value. These needs are even more pressing with climate change adding to the complexity of the forest-water relationship and influencing forestry and water policies in many regions of the world. New and innovative solutions should be promoted among policymakers in

the forest and water sectors in order to ensure the flow of benefits to all segments of society.

D. Forests and the green economy

81. The United Nations Environment Programme's Green Economy Report makes a case for increasing public and private investments in "green sectors" such as sustainable agriculture, cities and buildings, renewable energy, fisheries, forestry, industry, transport, waste management and recycling and water. The Report is intended to motivate and enable policymakers, business executives and shareholders at large to invest in green sectors and green policy reforms. Investing in clean energy, sustainable transport, forests and environmentally friendly agriculture is essential if internationally agreed goals to reduce poverty are to be achieved.

82. The forest sector has opportunities to contribute to the transition towards a green economy, with environmental, economic and social benefits for society, and to explore payment for ecosystem services schemes and other measures that broaden and diversify the financial basis for sustainable forest management and help maintain the protective functions of forests.

83. Wood energy, green infrastructure and buildings, and the role of forest resources as carbon sinks all present opportunities for the forest sector. Biomass energy can become a major player in the future energy supply and has better environmental credentials than biofuels derived from annual crops. With life-cycle analysis for building materials, wood will have a strong comparative advantage when compared with other building materials; it therefore has the potential to gain market share and usage in any future green construction.

E. Information and communications

84. A major challenge to effective forest governance is the inadequacy of knowledge needed to make appropriate decisions. Better knowledge about forests is needed in order to decide which forests are ecologically best suited for which purposes. There is limited data on forest conditions, property rights and the suitability of forests for given purposes. With the discussions on climate change and the potential for carbon-trading, the need for data and information will pose a challenge to managing forests sustainably and for their diverse use.

85. Investments in better information and knowledge about forests and their capacities, and about stakeholders and their interests, can help improve forest governance substantially. Better information systems and improved analyses are necessary to govern forests for improved outcomes and benefits. It is also of fundamental importance that such information and analyses be shared with those who need them and can benefit from using them. It is therefore important to take advantage of existing information and communications technologies to provide necessary information about forests to users at low cost, and to help them make better decisions. This creates new opportunities for better information-sharing and knowledge-building that call for improved initiatives in education and access in the forest sector. The International Year of Forests provides an opportunity and a platform to launch this information and communications drive in the forest sector in

order to create better awareness and enhance policy development through the improved sharing of information and knowledge.

VIII. Conclusions

86. **In the last three decades, forest rights and governance have changed in unprecedented ways, particularly in respect of the relationships between communities and Governments. This period has seen greater openness on the part of forest decision makers regarding the involvement of local populations in governance and in sharing the benefits from forests. It is critically important that these trends continue and be made more secure in the future.**

87. **One of the primary lessons from the past 50 years of forest governance is the need to incorporate the voices of people into forest governance if the goal is to ensure that people benefit from forests and to maintain long-term and sustainable benefits from forests.**

88. **It is important to consolidate ongoing processes of governance that are bringing together different groups of decision makers from communities, corporations and government agencies around mutually overlapping goals of forest governance, namely hybrid governance. Hybrid governance arrangements are challenging to craft and nurture. Government agencies that have been accustomed to managing forests by excluding others from forest use and governance as a result of historic and inherited colonial systems will need to accommodate new interests in forests so as to meet the increasing level of demands on forests and the competition among such demands.**

89. **Forests of the future may need to be managed equally for the sustainable supply of clean water as one of the goals for sustainable forest management, taking into account the growing demand for clean water for rural and urban populations and for agricultural purposes.**

90. **It is important to underscore the need to reform tenure rights and arrangements so as to attend to the interests of local communities and indigenous people, particularly in ensuring the flow of benefits under any emerging mechanism on REDD-plus under the current climate change negotiations.**

91. **Valuation of forest goods and services can provide opportunities for forest financing and contribute to improving human well-being.**

92. **Better knowledge about forests is needed in order to decide which forests are ecologically best suited for which purposes, and who the major claimants and stakeholders in relation to different forests are. Better information systems and improved analyses are necessary in order to govern forests for improved outcomes and benefits. Developments in information and communications technology should be used to provide the required information about forests to users and policymakers at low cost, and to help them make better decisions.**